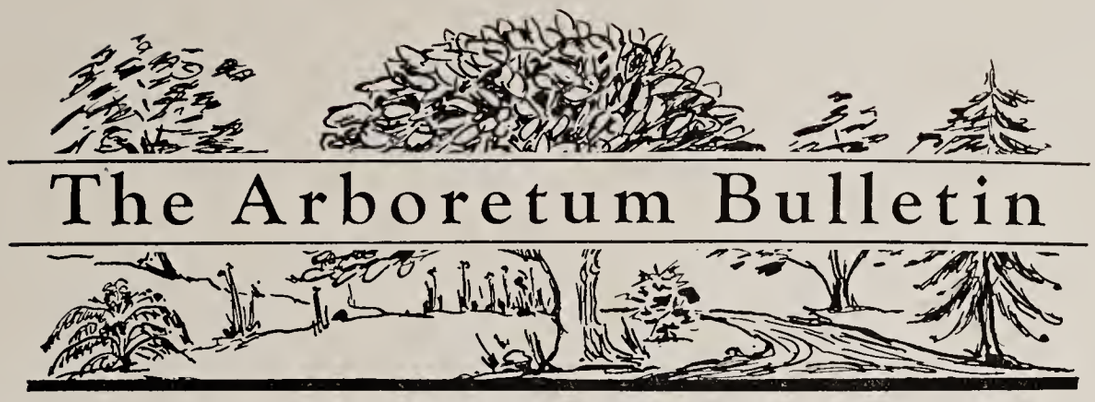

The Arboretum Bulletin

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THE PRUNING OF FRUIT TREES

By HERBERT PRUVEY

IN the purchase of young trees to commence an orchard, either individually or commercially, it is wise to stipulate one-year-old plants of No. 1 or No. 2 grade; by this method we secure a vigorous young plant for the foundation of our orchard. Only in the case of a variety being very scarce on the nursery market and yet desirable for our purpose should we condescend to accept two- to three-year-old plants. Assuming the trees are delivered as early in the season as possible (cherries breaking growth early), they should be heeled in until we are ready to plant.

Fruit trees are planted various distances, as, for instance, pears, sweet cherries and plum are set 20 by 20 or 25 feet; sour cherries, peach and apricot at 20 by 20 feet, apples 25 by 25 or 30 feet, dwarf pears and dwarf apples 15 by 15 feet.

The apricot and peach flower early, hence they should be planted at the highest elevation, to escape late frosts. Cherries require a sandy or gravelly soil, and will usually do best on the upland soils. Pears also appear to bear good crops on the sandy soils, but a sandy loam is desirable; if heavy clay lowlands exist in the orchard site, the plum is the tree to plant. Apples also will stand quite a piece of clay, yet good crops of both of these are secured on the upland soils. It is the policy to plant so that the point of union (bud or graft) is just below the ground line, firming the tree well with the heel all around, and, of course, planting the tree upright.

Trees of No. 1-2 grades one year old are usually whips (one strong growth), but in a few cases they are feathered (a strong growth with a few side branches). The first year's pruning after planting will consist of cutting these whips back to a good bud at three feet to three feet six inches; if the plant is a feathered plant, and the side growths are thin or weak, it is better to be treated as a whip, but if the side growths are vigorous and strong, we may select four or five of the best, well placed and spaced, so that no two form a fork at the trunk in any manner or form, and prune these back to about one-half or one-third.

On the Pacific Coast trees are started much lower than they are in the east. There are three reasons for this: first, trees are started lower in the west because we do not get the heavy snowfalls as they do in the east, hence the young, low branches are not enmeshed in the snow at their tips, which would cause them to rip or tear at the trunk; second, Pacific Coast growers consider that by starting the tree low, a fair proportion of the fruit is easier picked, and third, there is the question of sunsplit on the south side of the tree, sometimes causing a tree to die; if the tree is started low it will shade its own trunk with its foliage.

The second year's pruning consists of selecting four or five side shoots, as in our one-year feathered plants, cutting out the weakest and again leaving them well spaced and placed with no forks, with this exception: that in the peach and apricot we may leave more this second year, for some of these side branches have a tendency to die the second year, so it is feasible to leave eight or ten.

The third year's pruning consists of cutting out weak wood entirely, the removal of branches that run inward or criss-cross, leaving 10, 12 or 15 strong, vigorous growths, well balanced around the tree and all pointing outwards. These are pruned to one-half or two-thirds to a bud pointing outward; no fruit is allowed to form on the trees until they are four years from planting, unless they are of a type of early bearing, as apple, yellow transparent. From the fourth, fifth and sixth years on, the pruning will consist of the same as in the third year, with the exception that cutting to an outside bud will not always be possible, and that a few of the growths may be pruned one-third. Weak, decayed, and branches going inward or criss-cross are always removed, throwing the vigorous branches outward and upward. The object of pruning is to obtain fruit that is of good size and well colored. A lower number of apples are picked from a pruned tree, but they are larger. The top part of fruit trees should be pruned to admit light and air, especially the peach, which is subject to Peach Curl (Exoascus deformans), Powdery Mildew (Sphærotheca pannosa), and Brown Rot (Monilia fructigena). A better perspective can be obtained when most of the pruning is done from the ground, and leaders which are extreme in growth may be headed back.

February is probably the best month to prune, for soon after this the sap rises and wounds begin to heal over. No stubs should be left when pruning, and cuts over two inches are preferably dressed with a paint, or a tar extract such as roofing cement. Any operation which checks the flow of the sap downward

as root pruning, ringing, or even top grafting, appears to form fruit buds, but the first two are seldom necessary.

A little or light pruning every year is much more to be recommended than no pruning for five years and then often a wood-butchering. If a large quantity of watersprouts form, it is an indication the tree was pruned much too heavy the year or two previous, because, before pruning, the tree was balanced in relation of root to top, and by severe pruning of the top, the ascendancy was given to the root, with the result that in readjusting the balance, many strong vigorous shoots were reproduced, which equals watersprouts.

THE STONE BIRCH OF KAMCHATKA

By Walter J. Eyerdam

The Erman or stone birch, Betula Ermani Cham., is being propagated at the arboretum from a packet of seeds from Eastern Siberia. When they are large enough to plant it will be interesting to note the character of the leaves and any other differences which may develop in a climate that is foreign to this plant. Having traveled and collected plants in Kamchatka, I can picture in my mind the extensive forests of stone birch, which is the prevailing tree of the peninsula.

It grows on mountain slopes and bluffs along the rivers or elevated portions of river valleys. Its bark is rather dark and it has a wide spreading, branchy crown. Because of the wide crowns these trees cannot grow close together, so the forests composed of them are like parks. This allows plenty of room and light for the development of a profusion of herbaceous plants which thrive luxuriantly in the moist rich volcanic humus enhanced by the short, hot summers of long daylight in Kamchatka.

Betula Ermani is called the stone birch by the inhabitants because it always grows on stony or rocky soil and never in the large valleys. It also grows on moraines or near the sea.

The wood is hard and strong but cross-grained, so it is chiefly of use as fuel. Its thick bark is of especial value because it burns easily and is gathered readily.

The heavy snows break down many of the closely branched trees and the trunk generally breaks off about 10 to 12 feet above ground. Young trees grow usually from roots of the broken tree.

When I was in Kamchatka in 1928 the sable was making its last stand and had become extremely rare, where at one time it had been very common. Three years later a vast migration of Siberian squirrels had crossed the extensive tundra in the northwest portion of the peninsula. They came from the region around Gijighinok. No squirrels had been recorded from Kamchatka previously. Apparently the sable destroyed all squirrels that ever succeeded in crossing the tundras. Within five years after the migration, according to the Swedish zoologist, Sten Bergman, the squirrels had multiplied so rapidly that they were common in nearly all of the birch forests where they reside in the winter. The presence of these animals in abundance will insure the sable from extinction.

Betula Ermani hybridizes with several other species of birches. If it grows successfully in the arboretum it can become a valuable tree to be grown in stony soil and mountain country.

HEATHS AND HEATHERS

By Arthur P. Dome

To most folks the words "heather" means the Mediterranean hybrid, or, perhaps, a renowned, almost mythical shrub that grows on the moors of Scotland. Certainly it is sufficient classification for all those wiry, low-growing evergreens that on occasion burst forth with white and purple blossoms. While true heathers and heaths are not indigenous to this country almost any hardy variety can be grown in the Pacific Northwest, so it is well to know and understand these two distinct classifications.

The Ericas, which are the heaths, are woody perennials. They grow from three inches (Erica carnea, Springwood White), to the Erica arborea which grows to a height of 40 feet in Southern France and will attain a height of 10 feet or more here if not frozen back too often. The leaves of the Ericas are in whorls of three to six, usually three-sided, rarely flat. The greater number of this group have their flowers in spikes. Although there are some five hundred species native to Europe and Africa, only a comparatively few have been grown here.

Calluna vulgaris, which is the heather, is also a woody perennial. This group grows from one inch (Callum vulgaris, Mrs. Ronald Gray), to three feet (Calluna vulgaris, serleii grandiflora). The leaves are scale-like, opposite, and in four rows along the stem. The branchlets are quadrangular. The flowers are in terminal spikes and differ from the Erica in that the calyx and not the corolla is colored. The corolla, which is much like that of the Erica in shape, is only half as long as the calyx and hidden inside the sepals. These are indigenous to Europe and Asia Minor.

For the gardener who is lazy and who dislikes the job of planting beds of annuals each year, heaths and heathers are the answer to his prayer. Massed planting produces an effect that is truly lovely even at a great distance, but when one comes closer and hears the buzz of hundreds of busy bees, then watch out, Mr. Lazy Man, you'll be working, too, before you know it. Bees love heather. I have counted 15 at a time on one small plant. I have read that in England the beehives are carried out to the moors in the spring, for the nectar from the heather makes the choicest honey. Next spring I plan to buy a hive of bees to see if this is really true. As a matter of fact, statistics show that in England more honey is produced from the heather than from all other flowers put together. So here is one case in which a gardener may be practical as well as lazy.

Heathers are at their best in rock gardens or planted in masses on hillsides, for they do want good drainage. This does not mean that they cannot be grown effectively elsewhere. They make an excellent ground cover for deciduous azaleas. They keep the azalea roots cool and supply the protection of a woodland planting. Then, too, as the plants grow together, they smother out the weeds. Any of the Erica carneas are good here because they will bloom when the azaleas are bare.

They also make excellent border plants, better than boxwood, not only because they give you weeks of colorful bloom but because the plants are so easily trimmed and shaped. Any variety of Erica vagans may be used successfully for a hedge a foot high. Calluna vulgaris aurea makes a good edging plant. It is bright gold in summer, with sprays of lavender flowers, and when cold weather comes it turns a deep red. The Mediterranean

hybrid has been used very effectively for edging the front of the Justice building in Olympia.

For taller hedges, say from three to five feet, Erica stricta is very satisfactory. The flowers are a good pink and give a beautiful effect. The attractive foliage turns rather bronzy in winter. Of course the height and shape of any of the hedges depends upon the pruner and his shears.

If you have a large bank or terrace which is a job to cut, or if you have difficulty finding something to grow there, why not try a planting of heaths or heathers? You can have color part of the year, in fact all the year, if you plant a sequence of bloom. And best of all, once your plants are established you will need very little water during the summer months.

Then, too, these sturdy little plants have proven themselves excellent for stopping crosion on small banks. Their short, compact growth does not allow the water to run off, carrying the soil with it.

Erica mediterranea is often used to cover concrete walls because of its tolerance for lime, which most heaths and heather do not like. With the exception of mediterranea they like a well drained, peaty or lime-free soil. Clay soil may be made into good heather-growing soil by adding sand and peat moss until the mixture is about one-third sand, one-third clay and one-third peat. But wherever they grow a good dressing of peat moss in the spring will do them a world of good.

While soil is important for good results, location is just as important. They love sun and wind. So if possible give them a place in the open where the sun shines on them and the winds blow over them. If, however, your location is very windy, the taller varieties will need some protection.

(To Be Continued)

SEED COLLECTING IN WESTERN MOUNTAINS

By Sylvia Edmonds

(Concluded from Last Month)

Leaving our high valley by way of Tioga Pass we drove into Nevada, establishing our camp in the Mt. Rose country. In the morning as we moved toward the top of the mountain we encountered a veritable fairyland of flowers. The whole top of the mountain was in bloom! Beardtongues, Phacelias, Senecios, and delicate Drabas ran rampant. Here we found the rare Whitlow grass (not a true grass but really a comely Draba), which grows here and nowhere else in the world. After several hours, although we were loath to leave such beauty, the descent began. But the descent itself brought ever-changing charms. The gravelly washes fairly gleamed with a cool, translucent, lemon-colored evening primrose and here and there Viola Nuttallii laughed in the sun. The seed pods of both these plants become buried under the surface soil and one must dig for them. In the lower valleys which were more moist the picture changed again; here were masses of gentians and monkey flowers along with the fragrant Spiranthes. Standing amidst such beauty and variety one cannot but wonder why we Americans are incessantly seeking nature's loveliness in far-off lands when so much of it lies here in our own dooryards.

Nevada is a land of sagebrush. Great sweeps of it occupy the lowlands and continue far up into the mountains. In the Toiyabe Range we found it as far as 9500 feet up. Of course at these higher elevations it becomes much dwarfed due to the increasing severity of the climate. In the Toiyabes we also encountered one of the most versatile and widespread trees to be found in the United States, the trembling aspen. This tree is one of the few species whose range is transcontinental. It extends from the Atlantic to the Pacific across the northern states and Canada, following the Rockies down into Nevada. Unfortunately short-lived, it would otherwise be a fine ornamental.

The Ruby Mountains, also in the sage country, are Nevada's largest and most extensive. Many peaks rise to 12,000 feet and glacial lakes abound. Here we encountered the bristle cone pine occurring over wide areas along with the mountain mahogany, Cercocarpus. There were many large specimens of this latter species, the wood of which is used in turning. When polished it takes on a brilliant and striking reddish color.

The Ruby valley to the east is one of Nevada's richest; sheep and cattle are raised extensively. The valley floor is dotted with swampy lakes in which aquatic bird life flourishes.

To those who particularly enjoy the lushness of plant growth in the Pacific Northwest this sage country may not appeal. One is forced, however, to admit a definite glory and individuality in its ruggedness and in its severity.

Trekking northward out of Nevada we entered the Sawtooth country; these mountains are rightly named for their sharp, jagged peaks fairly cleave the sky. Here, at Toxaway Lake, we spent five wonderful days. Nightfall brought a chilly tang; northern lights gleamed magnificently; morning found frost, and ice formed in water buckets. An eagerness for the morrow's tasks reflected from all faces.

Our hike over the several miles to Alice Lake took us through beautiful country. On the gravelly slopes and in the rock crevices plants bloomed profusely. A dwarf fireweed (Epilobium obcordatum) formed pink splashes of color against the brownish rock and Ivesia clung in yellow clusters over the ledges. We passed through a grassy meadow dotted with the blue fringed gentian, and a swampy valley farther along yielded the rare, colorful Swertia palustris and Parnassia fimbriata; at swamp edge grew the lovely Penstemonopsis Tweedyii. On the drier, more open slopes in the background the alpine huckleberry and dwarf salal hung brilliantly red with fruit.

This wild land has fortunately been set aside as a wilderness area under the jurisdiction of the federal Forest Service whose policy is to have it remain forever in its natural form without exploitation. Only one road traverses the thousands of acres and access to most of it is by pack train only.

We completed our summer's activities at Mt. Borah, also in Idaho, where we were furnished a new thrill. Here we encountered, for the first time, the most outstanding plant of the trip, Kelseya uniflora. Kelseya is a small shrubby member of the rose family which forms dense, heavy mats but two or three inches tall and is a mass of beautiful pink flowers. Rock gardeners have coveted it for years as a true rarity. We were fortunate to find it in seed. The discovery of it successfully climaxed a most interesting and delightful summer. All told, we had collected the seeds of 166 different species, but in point of rarity, Kelseya topped them all.

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